REMARKS

After entry of this amendment, claims 1, 5, 8-11, 13, 15, 18, 19, 29, 32, 47, 49 and 51-59 are pending. New claims 55-59 have been added and find support *inter alia* in the original claims. New claim 55 finds further support in the specification, for example, at page 9, lines 23-25, page 10, lines 5-16, and page 20, lines 20-23. New claim 56 finds further support in the specification, for example, at page 10, lines 13-14. New claim 57 finds further support in the specification, for example, at page 10, lines 17-19, and page 38, lines 10-12. New claim 58 finds further support in the specification, for example, at page 27, lines 15-25, page 20, lines 20-23, and page 29, lines 23-25. New claim 59 finds further support in the specification, for example, at page 10, lines 13-14. No new matter has been added.

Applicants enclose herewith a Request for Continued Examination requesting entry of the above claim amendments and consideration of the present remarks. The above claim amendments and following remarks address the rejections in the Final Office Action dated July 20, 2010.

Claim Rejections – 35 U.S.C. § 103

Claims 1, 5, 8-10, 13, 18, 19, 29, 32, 47, 49 and 51-54 are rejected under 35 U.S.C. § 103(a) as being obvious over Lanahan *et al.* (hereinafter "Lanahan") in view of Gan, Grant *et al.* (hereinafter "Grant") and Samuelson *et al.* (hereinafter "Samuelson"). Claims 11 and 15 are rejected under 35 U.S.C. § 103(a) as being obvious over Lanahan in view of Gan, Grant, Samuelson, and further in view of Stomp *et al.* (hereinafter "Stomp"). Applicants respectfully traverse the rejections and request for reconsideration and withdrawal of the rejections for the reasons already of record and for the following additional reasons.

Applicants note initially that, in maintaining the present rejections, the Examiner again relies on Samuelson for the alleged proposition that yeast genes can be expressed in plants to obtain expected phenotype and/or enzymatic activity associated with the yeast protein. The Examiner specifically notes the passage provided at page 51, right Col., 3rd paragraph of Samuelson for support. Based on such an allegation, the Examiner contends that it would have been obvious for one skilled in the art to overexpress the sequence taught in Gan in a plant for the purpose of obtaining an abiotic stress tolerant transgenic plant with a reasonable expectation

of success. Applicants respectfully disagree and submit that a fair reading of Samuelson does not support the Examiner's above conclusion.

Samuelson discloses expression of two yeast Fe(III) reductases - FRE1 and FRE2 - in *Nicotiana tabacum*. Since Fe(III) reductases are responsible for Fe(III) reduction, it is expected that overexpression of functional Fe(III) reductases in plants would enhance Fe(III) reduction and thus, increase resistance to Fe-deficient conditions in plants. See e.g., Samuelson at page 51, right Col., last paragraph above "Material and Methods." However, it is found that two *FRE*-transformed lines, FRE1-A and FRE1-B lines, did not show enhanced Fe(III) reduction as expected. Samuelson at page 54, left Col., last full paragraph. Rather, the FRE1-A line was observed to be insignificantly different from the control. Samuelson at page 54, right Col., lines 6-7. Similarly, although significant increase of Fe(III) reduction was observed in FRE1 lines, there was no expected increase in resistance to Fe-deficient conditions found in those lines. Samuelson at page 56, right Col., last paragraph. Thus, a fair reading of Samuelson, particularly the passage noted by the Examiner (i.e. page 51 of Samuelson, right Col., 3rd paragraph), supports only a notion of what it provides, namely yeast genes can be expressed in plants. Neither the references cited in that passage, nor Samuelson, supports the Examiner's alleged proposition that expression of yeast genes in plants would lead to expected phenotype and/or enzymatic activity associated with the yeast protein. Rather, the results shown in Samuelson, specifically those observed from the transgenic lines that unexpectedly failed to show enhanced Fe(III) reduction or increased resistance to Fe-deficient conditions, supports Applicants' position as previously expressed.

Moreover, Applicants further note that, in rejecting claims 51-54 and refusing to consider that an increase in biomass production, photosynthetic yield, seed yield, and/or dry matter production in the transgenic plants is unexpected and surprising as further evidenced by Serrano *et al.* and Kasuga *et al.*, the Examiner argues that such a comparison between the present application and Serrano and/or Kasuga is incorrect. The Examiner contends that the protein taught in Serrano and/or Kasuga is structurally unrelated to the oxidoreductase of the present application and they affect different metabolic pathways and signal transduction pathways in plants. Applicants strongly disagree and wish to note that the proteins taught in Samuelson are also structurally unrelated to the oxidoreductase of the present application and they do affect

different metabolic pathways and signal transduction pathways in plants. As discussed above, Samuelson was relied upon by the Examiner for the general proposition that yeast genes could be expressed in plants, regardless what type of proteins the yeast gene encode. Similarly, Serrano and Kasuga are relied upon by Applicants to support the proposition that transgenic plants showing tolerance to stress conditions do not necessarily exhibit increased yield. For at least this reason, Applicants submit that an increase in biomass production, photosynthetic yield, seed yield, and/or dry matter production in the transgenic plants according to the present application is unexpected and surprising, and thus, nonobvious.

For at least the above additional reasons and for the reasons already of record, it is respectfully submitted that the combined teaching of the cited references does not render the claimed subject matter *prima facie* obvious. Accordingly, reconsideration and withdrawal of the rejections is respectfully requested.

Separate consideration to new claims 55-59 is respectfully requested. New claims 55-57 are directed to a method for modifying tolerance to at least one environmental stress in a plant comprising transforming a plant with an expression cassette comprising an ORSRP coding nucleic acid sequence operably linked to a promoter. New claim 56 further requires that the promoter is an inducible promoter and claim 57 further requires that the ORSRP coding nucleic acid sequence contained in the expression cassette is in antisense orientation. Similarly, new claims 58 and 59 are drawn to an expression cassette encoding a dsRNA molecule comprising a portion of the ORSRP coding nucleic acid sequence in sense orientation and the same portion in antisense orientation. It is respectfully submitted that, the cited references, alone or in combination, fail to teach the use of antisense or dsRNA molecule comprising the ORSRP coding nucleic acid sequence of the present application. Accordingly, the cited references do not render the new claims *prima facie* obvious.

For at least the above reasons, separate consideration and allowance of new claims 55-59 is respectfully requested.

CONCLUSION

In view of the above remarks and further in view of the above amendments, Applicant respectfully requests withdrawal of the rejections and allowance of the claims. If any

outstanding issues remain, the Examiner is invited to telephone the undersigned at the number given below.

Applicant reserves all rights to pursue the non-elected claims and subject matter in one or more divisional applications, if necessary.

Accompanying this response is a Request for Continued Examination and a petition for a one-month extension of time to and including November 22, 2010 to respond to the Office Action mailed July 20, 2010, pursuant to 37 CFR § 1.7(a), with the required fee. No further fee is believed due. However, if a fee is due, the Director is authorized to charge our Deposit Account No. 03-2775, under Order No. 13311-00012-US from which the undersigned is authorized to draw.

Respectfully submitted,

By / Hui-Ju Wu /

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